entered into research collaborations with eight leading research institutes for twelve research projects in areas of efficiency and environment with respect to power generation, to be completed over a time period of 18 to 48 months at a cost of Rs. 8 crores.

Central Power Research Institute (CPRI) is undertaking R&D in coal based power in the following areas:

* Coal blending & beneficiation
* Coal-based boiler heat rate improvement and analysis
* Diagnostic techniques and RLA
* Flue gas analysis for constituents like Sox, NOx and CO

In view of the high ash content of Indian coal, fly ash to the tune of about 110 million tonnes per annum is being generated from the coal-based power stations. With a view to encourage and facilitate greater utilization of fly ash and its derivatives, and in an environment-friendly manner through development of value added products, CPRI has recently established a Centre for Industrial Solid Waste Utilization (CISWU) in Bangalore at a cost of Rs. 4.30 crores.

The Working Group on Power for 11th Five Year Plan of this Ministry has recommended an allocation of Rs. 1213.5 crores for R&D in power sector during the 11th Five Year Plan out of which an amount of Rs. 93 crores is to be earmarked for R&D in coal-based power generation.

Power capacity addition

1434. SHRIMATI SYEDA ANWARA TAIMUR:
SHRI VIJAY J. DARDA:

Will the Minister of POWER be pleased to state:

(a) whether it is a fact that 1,00,000 MW capacity addition till 2012 will suffice to meet the increasing requirements of power to all;

(b) whether the 70,000 MW require during Eleventh Five Year Plan period to meet the targeted economic growth rate of 9 per cent would be possible keeping in view the paucity of resources, and the past experience during the Ninth and Tenth Five Year Plans;

(c) whether public-private joint approach would be the mechanism; and

(d) if so, whether only production and transmission will be done by these joint entities or distribution would also be entrusted to them?

THE MINISTER OF POWER (SHRI SUSHILKUMAR SHINDE): (a) and (b) The National Electricity Policy envisages "Power for all by 2012 and per capita availability of power to be increased to over 1000 units by 2011-12. To achieve this, a capacity addition of about 1,00,000 MW is required during the 10th and 11th Plan period. Based on the project preparedness, capacity addition to the tune of over 76,400 MW has been proposed. This appears possible due to the following reasons:

(i) Out of the proposed capacity addition during Eleventh Plan, over 44,000 MW is under construction.

(ii) Out of the proposed capacity addition of about 16,250 MW through hydro projects, over 13,500 MW is already under execution.

(iii) During the Eleventh Plan, over 57,000 MW is proposed as thermal capacity addition. Out of this over 51,000 MW is to be coal fired. In respect of coal fired projects identified, 36,125 MW already have coal linkage and another 6,580 MW have been allocated captive coal blocks.

(iv) Power Finance Corporation and Rural Electrification Corporation have mobilized themselves adequately to ensure that good projects do not suffer for want of funds.

(c) and (d) As per the latest instructions dated 31.1.2007 of Ministry of Finance, all projects of Public Sector Undertakings in Joint Venture mode need to be processed by Public Private Partnership Appraisal Committee except those which fulfil the following conditions:

(i) The Joint venture is not sponsored by a public sector entity. The asset sought to be created is for dedicated use and not a public asset.

(ii) There is no BoT arrangement.

(iii) The public sector entity/Government has no liabilities on account of the Joint Venture except the commercial risks associated with its equity contribution into the company.

(iv) The entire demand risk and other risks associated with the project are borne by the Joint Venture.

(v) There is no obligation/provision for a buy-out or termination payments to be made by the public sector entity or Government under any circumstances whatsoever.

(vi) The management of the JV is separate from the Public Sector Undertaking's functioning and is managed independently by the JV Board.

(vii) There is no protection for change in law, *i.e.*, the Public Sector Entity or Government does not cover political risks.

(viii) There is no contingent liability for Government or Public Sector Entity under any event of default or under any circumstances whatsoever.

(ix) All liabilities rest with the JV Company.

(x) The Public Sector entity is not liable for any debt repayments or any other payments under any circumstances whatsoever.

Shortage of electricity

†1435. DR. MURLI MANOHAR JOSHI:
SHRI RAM JETHMALANI:

Will the Minister of POWER be pleased to state:

(a) whether it is a fact that as per the recently made assessment, the shortage of electricity normally is 7.5 per cent and 12 per cent at the peak hour;

(b) if not, the details thereof;

(c) whether it is a fact that the said shortage can be overcome by the electricity distribution and transmission system, improvement in power generation projects and extension of power transmission system at national level;

(d) if so, Government's reaction thereto; and

†Original notice of the question was received in Hindi.